Late thrombosis of thoracic aortic stent graft

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A 17-year-old motorcycle accident victim underwent urgent successful thoracic endovascular aortic repair (TEVAR) of blunt thoracic aortic rupture. On computed tomography (CT), the rupture was distal to the origin of the subclavian artery and was treated with a custom-made, 24 mm, 6.6 cm TX2 stent. The stent graft was inserted via the femoral artery and positioned at the level of the area of aortic rupture.

One year later, the patient was admitted to the emergency department for sudden onset of severe dyspnoea, abdominal pain, and paraparesis of the legs.

Transoesophageal echocardiography revealed severe circumferential thrombosis of the distal part of the stent (Panels A and B, and see Supplementary data online, Movie S1) producing significant stenosis.

Thoracoabdominal CT showed in-stent thrombosis causing severe stenosis of the distal descending thoracic aorta, without signs of stent degeneration, endoleaks, and/or collapse of the scaffold (Panel C).

Emergency open aortic bypass surgery was performed with an extra-anatomical Dacron graft connecting the ascending aorta to the supraceliac abdominal aorta, as seen on the postoperative CT (Panel D). The patient was discharged with no additional complications.

Late thrombosis of the stent was an unusual complication of TEVAR. A possible mechanism of this complication may be a tiny intimal lesion secondary to graft delivery that could initiate a stepwise thrombosis process. Aortic stent thrombosis can determine different clinical settings: distal emboli or an increase in afterload with resistant high blood pressure leading to heart failure. If the patient is haemodynamically stable, anticoagulants can be indicated. When signs of severe stenosis and haemodynamic compromise appear, emergency surgery must be performed.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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